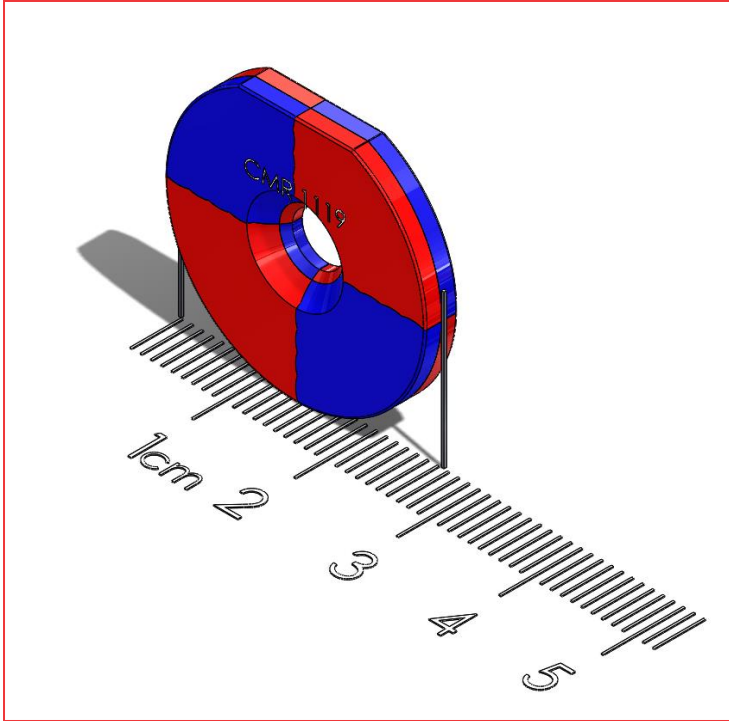


1001119

Twist Release Polymagnet

Twist/Release Polymagnets are engineered to provide strong attachment and alignment forces at 0° and 180° positions and a repulsion force once rotated +/- 90°. To achieve this behavior, these magnets are used in pairs and must be axially aligned. These Polymagnets also exhibit a tightly controlled magnetic field which minimizes interference with sensitive devices.



Features and Benefits

- M4 countersunk
- Pairs with self.
- D shaped

Technical Specifications:

Shape Type:	D-Shape	
Diameter:	1.0"	
Weight:	0.38 oz	(11 g)
Material:	NdFeB	
Magnet Grade:	N50	
Coating:	Ni-Cu-Ni	
Temperature		
Rating:	140° F	(80 C)
Holding Force*:	12.5 lbs	(56 N)
Max Torque*:	54.5 oz-in	(385 mN*m)

**at 1.5mm separation*

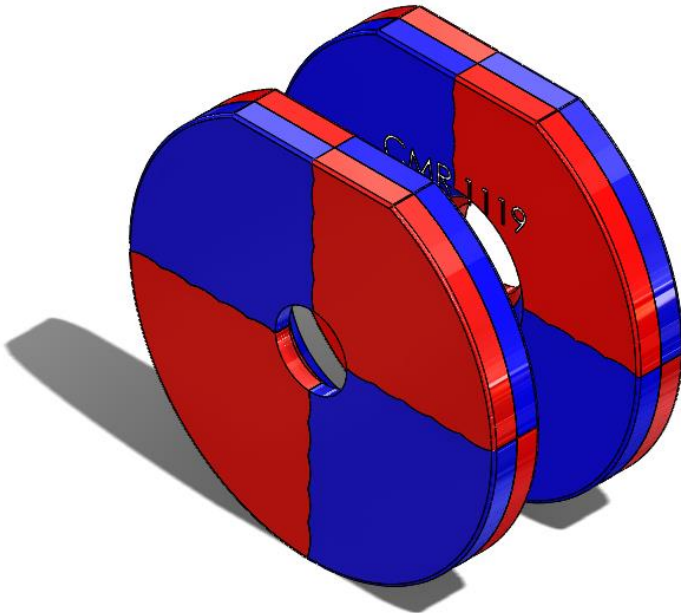


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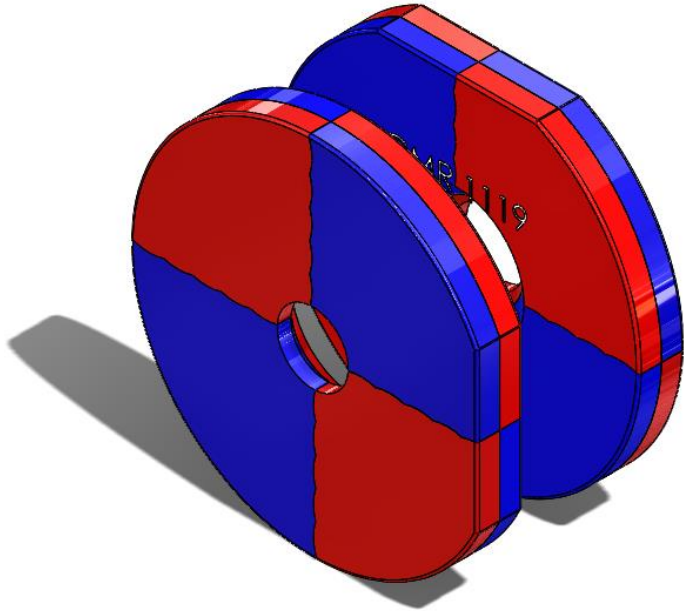
These Polymagnets exhibit a high holding force when they are rotationally aligned at 0° and 180°, and a maximum repel force at 90° and 270°. When rotating one magnet with respect to its complimentary magnet, the holding force decreases as the repel force increases to a maximum at 90°. When the Polymagnets are offset by some angle, torque exists toward the aligned position.

*In the images below, north poles are indicated by the red regions, south poles are indicated by the blue regions, and steel, if any, is indicated by the grey region.

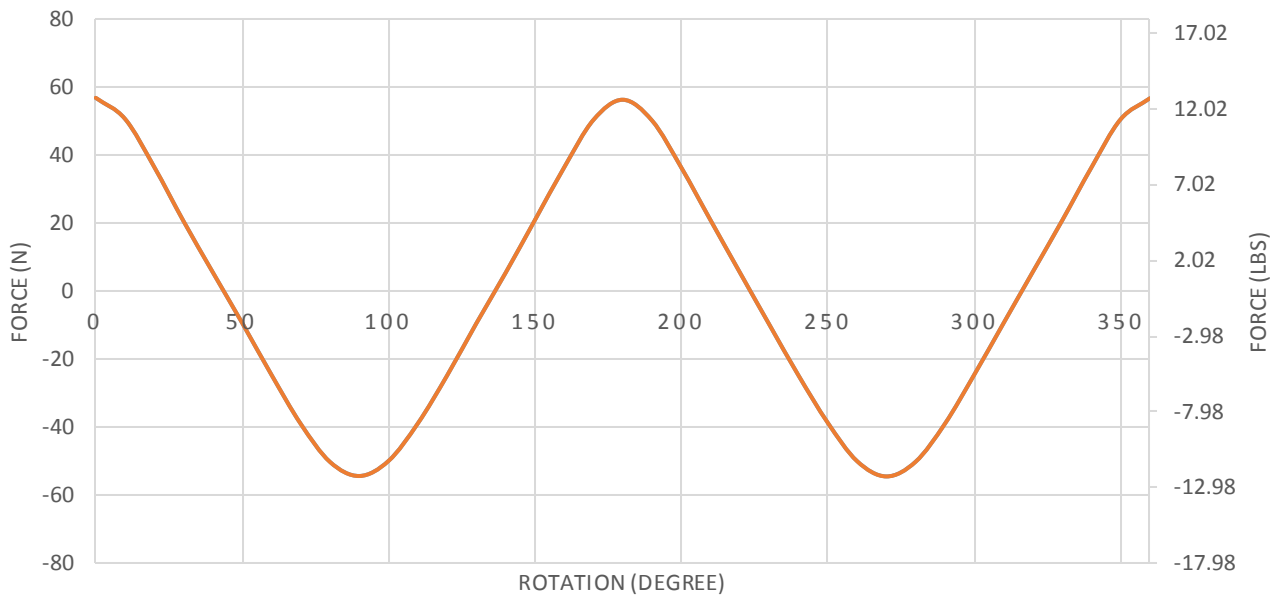
ALIGNED (ATTRACTION)



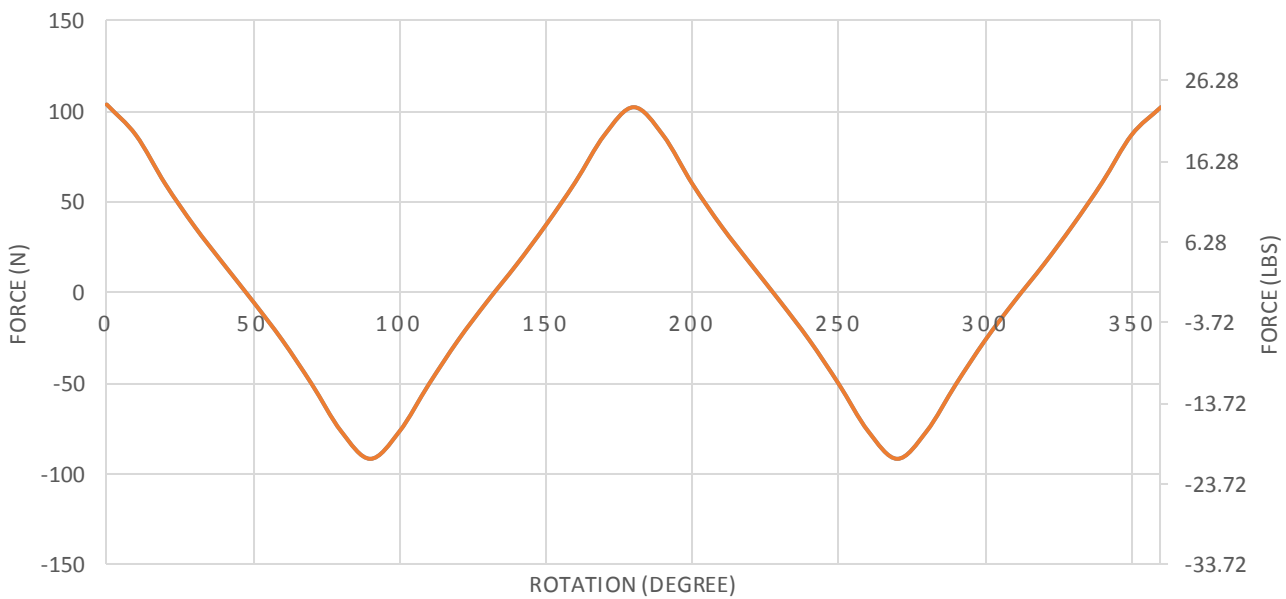
90° ROTATION (REPULSION)



HOLDING FORCE VS ROTATION AT 1.5MM MAGNET TO MAGNET GAP

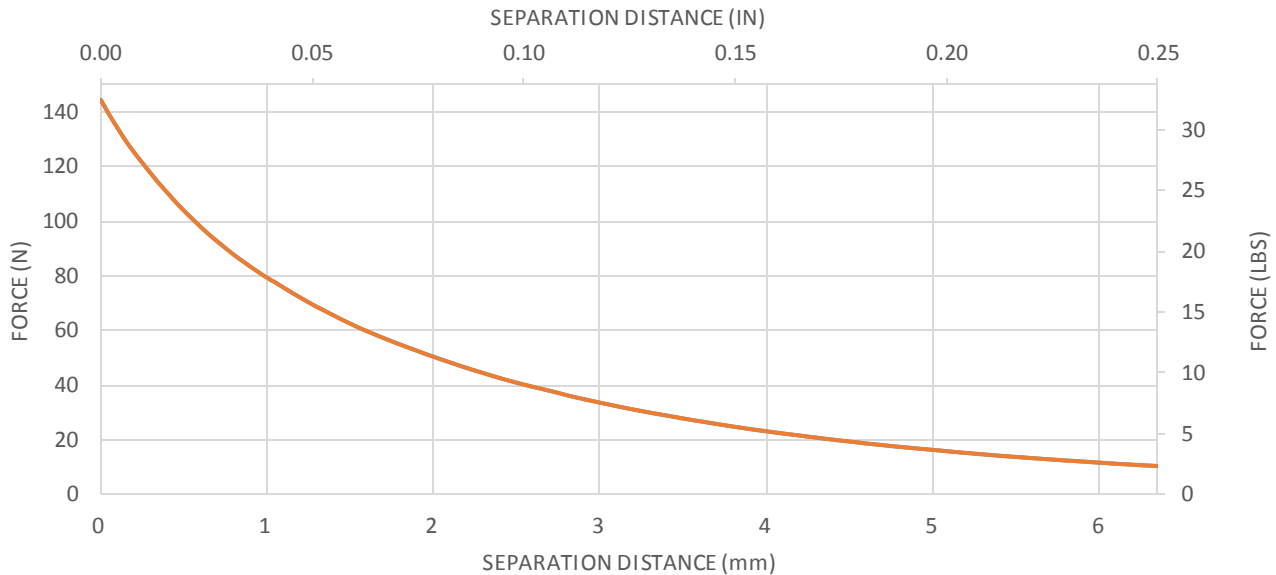


HOLDING FORCE VS ROTATION AT 0.5MM MAGNET TO MAGNET GAP

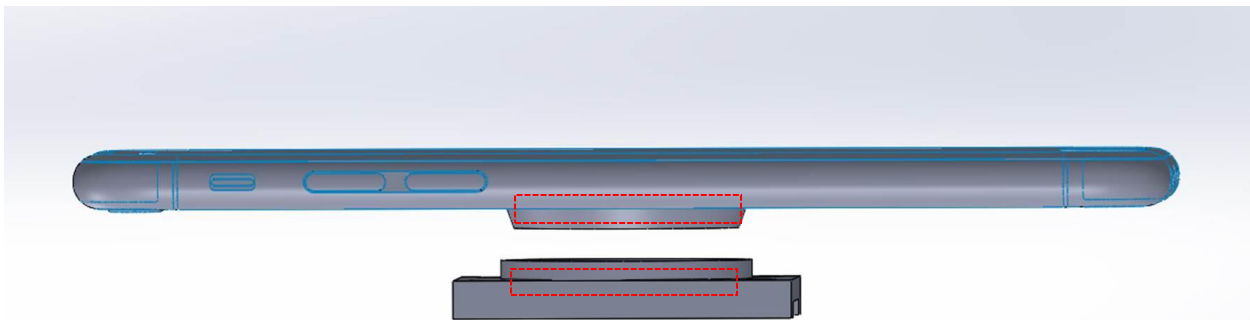


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HOLDING FORCE VS SEPARATION DISTANCE MAGNET TO MAGNET



These Polymagnets are D-shaped which provides an indexing feature. This aids in the assembly process as well as provides a flat surface to resist the torque created as the magnets are rotated. In order for this system to work correctly, there must be a mechanical feature which constrains the system as seen in the picture below.



Notes on Performance Data

The performance information provided in this data sheet is derived from test or simulation results of directly comparable magnets of the same size and grade under consistent conditions. The magnets are tested under controlled environmental conditions. Unconstrained application testing may give lower forces due to the magnet tilting or shifting away from target during engagement and disengagement. Magnetic performance may vary by up to 7%, the values presented here are based on nominal magnetic properties

Patent Information

Pat. www.cmrpatents.com

